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Supplemental Material

Reducing Phthalate, Paraben, and Phenol Exposure from Personal Care Products in Adolescent Girls: Findings from the HERMOSA Intervention Study

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Table of Contents

Table S1. Creatinine-corrected urinary concentrations ($\mu\text{g/g}$) of other phthalates and phenols not primarily found in personal care products, comparing adolescent girls participating in HERMOSA (N=100) and NHANES (N=108)

Table S2. Pre- and post-intervention creatinine-corrected urinary concentrations (ng/g)

Table S3. Pre- and post-intervention specific-gravity-corrected urinary concentrations (ng/mL) of other phthalates and phenols not primarily found in personal care products

Figure S1. Individual pre- and post-intervention specific-gravity-corrected urinary concentrations (ng/mL) of A) mono-ethyl phthalate (MEP), B) MEP, enlarged to focus on values <600 ng/ml, C) mono-n-butyl phthalate (MnBP), D) mono-isobutyl phthalate (MiBP), E) MiBP, enlarged to focus on values <200 ng/mL, F) methyl paraben, G) ethyl paraben, H) butyl paraben, I) propyl paraben, J) triclosan and K) benzophenone-3 (BP-3) analytes for each participant in the study.

Table S1. Creatinine-corrected urinary concentrations ($\mu\text{g/g}$) of other phthalates and phenols not primarily found in personal care products, comparing adolescent girls participating in HERMOSA (N=100) and NHANES (N=108)

Analyte	HERMOSA Study Pre-Intervention 2013						NHANES 2011-2012 (Girls 14-18)						p-value ^a		
	LOD ($\mu\text{g/L}$)	DF (%)	GM ($\mu\text{g/g}$)	Percentile ($\mu\text{g/g}$)			LOD ($\mu\text{g/L}$)	DF (%)	GM ($\mu\text{g/g}$)	Percentile ($\mu\text{g/g}$)					
				25%	50%	75%	95%			25%	50%	75%	95%		
Phthalates:															
MBzP	0.2	100	4.9	2.8	4.6	7.8	22.2	0.3	99	5.3	3.2	5.5	10.1	20.6	0.50
MEHP	0.2	88	1.4	.72	1.6	2.4	6.1	0.5	78	1.4	.61	1.2	2.8	10.2	0.96
MEHHP	0.2	98	4.7	3.0	4.3	7.9	15.9	0.2	100	8.4	4.6	7.0	10.6	53.9	<0.01
MECPP	0.2	100	8.7	5.7	8.1	12.3	33.6	0.2	100	13.6	7.2	10.5	18.1	65.1	<0.01
MEOHP	0.1	99	3.7	2.4	3.6	5.5	12.5	0.2	100	5.3	3.0	4.3	7.1	31.6	0.02
MCPP	0.1	97	1.4	0.9	1.4	1.9	4.3	0.2	98	2.9	1.1	1.8	4.8	45.7	<0.01
Phenols:															
BPA	0.2	81	0.8	.45	.9	1.5	4.3	0.4	91	1.6	.74	1.2	2.3	8.7	<0.01

^aComparison of HERMOSA and NHANES geometric means

Abbreviations: LOD = Limit of detection, DF = Detection Frequency, GM = Geometric Mean

Table S2. Pre- and post-intervention creatinine-corrected urinary concentrations (ng/g)

Analyte	Pre-intervention	Post-intervention	Mixed Effect Model ^a	
	GM (SE)	GM (SE)	% change (95% CI)	p-value
Phthalates:				
MEP	43.9 (1.1)	31.4 (1.1)	-28.3 (-39.6, -14.9)	<0.001
MnBP	15.9 (1.1)	14.0 (1.1)	-11.9 (-20.5, -2.4)	0.02
MiBP	8.5 (1.1)	8.5 (2.3)	-0.2 (-9.9, 10.4)	0.96
Parabens:				
Methyl paraben	43.4 (1.2)	24.1 (1.2)	-44.5 (-61.1, -20.8)	<0.01
Ethyl paraben	1.6 (1.2)	2.4 (1.2)	43.5 (-2.6, 111.7)	0.07
Butyl paraben	0.5 (1.2)	0.9 (1.2)	100.1 (32.8, 201.6)	<0.01
Propyl paraben	12.7 (1.2)	6.9 (1.2)	-45.6 (63.3, -19.3)	<0.01
Phenols:				
Triclosan	5.3 (1.3)	3.4 (1.2)	-36.3 (-53.2, -13.4)	<0.01
BP-3	97.4 (1.2)	63.2 (1.2)	-35.1 (-49.7, -16.1)	<0.01

^aAdjusted for time of urine collection(using 24-hour clock hours and minutes).

Table S3. Pre- and post-intervention specific-gravity-corrected urinary concentrations (ng/mL) of other phthalates and phenols not primarily found in personal care products

Analyte	Pre-intervention	Post-intervention	Mixed Effect Model ^a	
	GM (SE)	GM (SE)	% change (95% CI)	p-value
Phthalates:				
MBzP	8.7 (1.1)	8.8 (1.1)	1.1 (-6.9, 9.7)	0.80
MEHP	2.4 (1.1)	2.8 (1.1)	15.9 (-3.4, 39.0)	0.11
MEHHP	8.3 (1.1)	8.4 (1.1)	1.2 (-13.8, 18.8)	0.88
MECPP	15.6 (1.1)	16.5 (1.1)	5.4 (-9.3, 22.6)	0.49
MEOHP	6.7 (1.1)	6.8 (1.1)	1.7 (-13.0, 18.8)	0.84
MCPP	2.6 (1.1)	2.4 (1.1)	-7.3 (-23.5, 12.2)	0.44
Phenols:				
BPA	1.4 (1.1)	1.6 (1.1)	10.6 (-12.8, 40.3)	0.40

^aAdjusted for time of urine collection (using 24-hour clock hours and minutes).

Figure S1. Individual pre- and post-intervention specific-gravity-corrected urinary concentrations (ng/mL) of A) mono-ethyl phthalate (MEP), B) MEP, enlarged to focus on values <600 ng/ml, C) mono-n-butyl phthalate (MnBP), D) mono-isobutyl phthalate (MiBP), E) MiBP, enlarged to focus on values <200 ng/mL, F) methyl paraben, G) ethyl paraben, H) butyl paraben, I) propyl paraben, J) triclosan and K) benzophenone-3 (BP-3) analytes for each participant in the study.

